SUBSTITUTE SPECIFICATION

PATENT APPLICATION

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FLEXIBLE LAMINATE FOR COATING AND PROTECTION OF SURFACES~~, AND MANUFACTURING METHOD OF THE SAME~~

BACKGROUND OF THE INVENTION

1. Field of the Invention

~~[0001] The invention herein relates to flexible films such as linings to coat different furniture, accessories, etc. More specifically, it relates to antiskid and adhesive flexible laminates for coating different surfaces, and the manufacturing method of the same.~~

~~2. Description of the Related Art~~

[0001] ~~[0002]~~ ~~A great~~Currently there are any number of laminate materials ~~have been currently developed, aimed to coat different~~for covering various surfaces~~, for~~. For example, there are ~~different~~various types of ~~decorating papers known as wallpaper with different engravings and printings, which necessarily require a surface with glue or adhesive material for adhering to the surface to cover; thus, said laminate products once placed are permanent are non-~~decorative papers known as wallpapers or tapestry papers with various printed or embossed designs that require a glue or an adhesive material covered surface to adhere to the surface to be covered. Once applied, the laminated products are permanent and not removable. There are other ~~laminate materials~~laminates made of plastic ~~materials~~, some of them consisting ~~on~~of simple ~~coating~~ plastic sheets~~; nonetheless, when placed, over~~ for surfacing. Nevertheless when these are applied to smooth surfaces~~,~~ they tend to ~~skid~~slip and are generally unstable ~~having skidding in the plane~~

~~of surface where they are placed or overlapped there are other laminate products consisting on woven materials adhered to plastic films, these skid likewise in surfaces; there are others consisting on woven materials with foamed materials to avoid skidding; said foaming is applied to such woven materials, nonetheless, foaming separates after the application, leaving foamed areas well defined on the threads, conforming a partially adhesive surface, because it contains foaming in the threads and in the spaces between them there is no foaming; such generates a surface with homogeneous foaming distribution areas, and homogenous distribution spaces without foaming, which could result on a little adhesive surface before the uniformity of contact points with the surface covered.~~, evidencing slippage on the surface plane to which they are applied or overlaid.

[0002] There are other laminated products consisting of woven materials glued to plastic films, these also tend to slip at their surfaces. There are other materials woven of foam materials to avoid slippage, after application the foam separates leaving well defined foam areas at the threads, forming a surface that can only partially adhere, given that there is foam at the threads but not in the spaces between threads. This generates a surface with homogenous areas of foam distribution and homogenous spaces between them without foam that could result in a surface that does not adhere well given the uniformity of the points of contact of the surface to be covered.

[0003] On reviewing prior art, the following patents were found: US 6,130,174 of James J. Hawley, dated October 10, 2000; US 5,863,845 of Thomas Hendrix Owen, dated January 26, 1999; US 5,707,903 of Herbert S. Schottenfeld, dated January 13, 1998.

[0004] ~~**[0003]** Searching for previous similar inventions, we found patents US 6,130,174 of James J. Hawley as of October 10th, 2000; US 5,863,845 of Thomas Hendrix Owen, as of~~

~~January 26th, 1999; US 5,707,903 of Schottenfeld Herbert S. as of January 13th 1998. The first of them~~The first of these refers to a ~~laminate~~laminated material that ~~has the characteristic of not skidding over~~does not slip along a surface and ~~provides~~ a smooth surface is provided on the other side, ~~which~~and this protects a ~~laminate~~laminated product ~~that generally comprises~~comprised by a laminate layer ~~of vinyl plastic,~~that is generally and continuously flat; a woven layer that ~~comprises a woven material~~includes a fabric covered with a foamed plastic made of a ~~compound of~~ polyvinyl chloride compound and ~~linking~~the means of ~~such~~bonding the woven layer with ~~such~~the flat laminated layer. This patent ~~uses~~employs for such purpose a woven ~~layer~~layer covered with a ~~foamed~~ plastic foam that generates spaces between adjacent threads~~, forming~~ simply ~~widths~~forming thicknesses around the ~~woven~~fabric threads and the ~~top~~upper layer is smooth.

[0005] ~~[0004] Regarding~~With regard to the second ~~American patent located and mentioned in the previous paragraph, it refers~~patent indicated, reference is made to a removable cover with non-adhesive and ~~nonskid removable cover, which~~non-slip coating that protects ~~such~~the removable cover for a primary surface, ~~comprising~~that includes: a substrate ~~that has a top surface and a low surface~~with upper and lower surfaces, where at least a ~~part~~portion of ~~such~~the lower surface ~~comprises~~includes a non-adhesive and ~~nonskid~~non-slip surface; and ~~a top~~an upper sheet adhered to ~~such top surface of such~~the upper surface of the substrate, ~~where,~~such that when ~~said nonskid~~the lower non-slip surface ~~of such substrate~~ is in contact with the primary surface, the cover does not ~~skid~~slip tangentially or laterally ~~in relation to~~ ~~such~~the primary surface, where the ~~top~~upper sheet is a covered ~~top~~upper sheet~~,~~ and where the covered ~~top~~upper sheet incorporates a coating that is selected from the group that ~~consists on ink~~is comprised by coloring, wax, ~~plate~~veneer and a combination of ~~all the above.~~these.

[0006] ~~[0005] Regarding~~Then the third ~~and last American patent mentioned above, is a nonskid~~patent cited refers to a non-slip decorative ~~lining~~veneer that protects a ~~laminate lining to cover generally smooth surfaces, and the lining comprises: a nonskid cushion comprised by a material covered with a foamed~~laminated veneer for covering generally flat surfaces. This covering includes a non-slip cushion that includes a fabric covered with a polyvinyl chloride compound~~, to increase the extendible strength, having the cushion~~ foam for increasing the extendable firmness, the cushion having first and second ~~opposed~~ faces in opposition and a ~~plurality~~quantity of open cells ~~extended~~extending through ~~such~~the cushion from the first to the second ~~faces; said~~face, the second face of the cushion ~~comprises a frictional face fitted to hold~~being a friction-augmented face adapted to grip the surface and restrict the cushion's movement ~~of~~on the ~~cushion in the plane of~~ surface plane when the second face ~~makes contact with~~contacts the surface~~; said frictional~~, the friction-augmented face is free of adhesive substances; and a ~~coating sheet~~cover layer that has ~~a~~opposing first and second ~~opposed~~faces, ~~said~~the second face of the ~~coating sheet is~~cover layer being permanently ~~attached~~joined to the first face of the ~~nonskid~~non-slip cushion.

[0007] ~~[0006]~~ In general terms, the laminates ~~that cover such~~protected by these patents ~~comprise basically~~primarily include as a substrate a woven ~~media~~fabric or ~~material~~cloth to which ~~foaming~~a foam is applied to provide ~~it with the antiskid~~non-slip properties and ~~attach~~for bonding to a smooth ~~top~~upper layer ~~through~~by means of an adhesive. ~~Nonetheless, said~~Nevertheless the laminates ~~comprise their~~include a smooth ~~top~~upper surface and little adherence ~~in its~~on their lower ~~face.~~surface.

~~SUMMARY~~OBJECTIVES OF THE INVENTION

[0008] ~~[0007] The~~This invention ~~herein~~ has as ~~a~~its main ~~objective~~purpose to make available a flexible laminate that ~~allows~~will allow the coating and protection of ~~different surfaces, either~~

~~decorative or antiskid. Another objective of the invention herein, is to provide such flexible laminate that besides avoids scratching, staining and damage of the surfaces covered.~~various surfaces, and that it be decorative and anti-slippage.

~~[0008] Even another objective of the invention is to make available such flexible laminate, guaranteeing besides the smoothness of the surface covered to freely slide the items laying on the same.~~

[0009] Another objective of this invention is to provide the flexible laminate that will also prevent scratches, spots and ill treatment of the surfaces it covers.

[0010] Another objective of the invention is to make available the flexible laminate that in addition will guarantee the flatness of the surface covered so as to allow articles placed on it to slide freely.

[0011] ~~[0009] And~~In addition to all those qualities and objectives that will ~~be evident when carrying out a description of the~~become apparent on describing this invention ~~herein~~, supported ~~in~~by the illustrated ~~modes.~~ modalities.

BRIEF DESCRIPTION OF THE INVENTION

[0012] ~~[0010]~~ In general terms, the flexible laminate for ~~coating~~covering and ~~protection of~~protecting surfaces, ~~according to the~~in accordance with this invention ~~herein~~, consists ~~on a laminate~~of the lamination of two ~~PVC~~ layers of PVC, one composed ~~by a non-woven saturated~~of an unwoven polyester material saturated with a foamed plastisol in order to generate an ~~adhesive~~adherent surface ~~with the characteristic of not skidding over~~that will not slip on the

surface ~~whereon~~ on which it is placed, ~~and~~ the other consisting ~~on~~of a decorative ~~film of~~ flexible PVC film, smooth or texturized, ~~both attached~~joined together by means of a PVC adhesive.

[0013] ~~[0011] Said~~This flexible laminate ~~is~~bonds firmly ~~adhered~~ to the surface to ~~cover, guaranteeing the~~be covered, ensuring its protection and ~~smoothness, and likewise avoids such~~flatness. It also prevents the laminate from ~~skidding through~~sliding over the surface ~~covered.~~ it covers.

[0014] ~~[0012] Said~~The flexible PVC decorative film~~, may~~ can be engraved, ~~printed~~imprinted, stamped or ~~in its combinations~~any combination thereof.

[0015] ~~[0013] Said~~The flexible laminate for covering and ~~protection of~~protecting surfaces~~,~~ has a thickness of ~~about~~approximately 34 or more thousandths of an inch ~~thick~~.

[0016] ~~[0014] To~~In order to better ~~understand~~comprehend the characteristics of the invention, the ~~description herein is attached, as~~drawings described following are attached to illustrate, without limitation, this description, of which they are an integral part ~~of the same, with drawings to illustrate, but not limited to that, described as follows.~~ .

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] ~~[0015]~~ A better understanding of the present invention can be obtained when the detailed description set forth below is reviewed in conjunction with the accompanying drawings, in which:

[0018] ~~[0016]~~ Figure 1 shows ~~a top~~an upper view of the laminate for covering and ~~protection of~~protecting surfaces.

[0019] ~~[0017]~~ Figure 2 shows a lower view of the ~~antiskid~~non-slip substrate for ~~coating~~covering and ~~protection of~~protecting surfaces.

[0020] ~~[0018]~~ Figure 3 shows a ~~transversal cut~~cross section of the flexible laminate for ~~coating~~covering and ~~protection of~~protecting surfaces.

[0021] ~~[0019]~~ Figure 4 shows a schematic diagram of the method and devices for stamping and ~~laminate, according to the~~laminating, in accordance with this invention ~~herein~~.

[0022] ~~[0020]~~ Figure 5 ~~shows~~illustrates a schematic diagram of the method and devices for ~~impregnation~~impregnating and ~~melting of~~fusing the plastisol, ~~according to the~~in accordance with this invention ~~herein~~.

[0023] ~~[0021]~~ Figure 6 shows a schematic diagram of the method and devices for ~~attaching~~bonding and conforming the layers in order to form ~~said~~the flexible film~~,~~ for ~~coating~~covering and ~~protection of~~protecting surfaces, ~~according to the invention herein~~in accordance with this invention.

[0024] In order to better understand the invention, a detailed description will be given of some of its modalities, as shown in the drawings that are attached to illustrate, without limitation, this description.

[0025] ~~[0022]~~ To better understand the invention, we shall carry out the detailed description of some of the modalities of the same, shown in the drawings with illustrative but not limited purposes, attached to the description herein.

DETAILED DESCRIPTION OF THE ~~PREFERRED EMBODIMENTS~~INVENTION

[0026] ~~[0023] As illustrated in Fig. 1, the~~The characteristic details of the flexible laminate for ~~coating~~covering and ~~protection of~~protecting surfaces~~,~~ are clearly shown in the following description and in the illustrative drawings attached, ~~being the same useful as~~which serve as points of reference ~~signs to show the same~~to indicate the parts ~~referred~~ to which reference is made.

[0027] ~~[0024] Regarding~~We make reference to Figures 1 and 2 that show ~~a top~~upper and lower ~~view~~views, respectively, of the laminate for ~~coating~~covering and ~~protection of~~protecting surfaces ~~respectively. Said figure shows laminate 1, comprising a top layer consisting on a top.~~ The figures show laminate (1) that includes the upper layer comprised by an upper decorative ~~film of~~ flexible PVC ~~2,~~layer (2), smooth and preferably, as ~~in this~~is the case, engraved, and the lower layer ~~consisting on~~composed of a continuous non-woven material ~~3,~~(3) saturated with a foamed plastisol (4) that generates ~~an~~a lower irregular ~~lower~~ surface with spaces covered ~~5,~~ ~~by~~with foam (5) and ~~free~~ spaces ~~6,~~free of foam (6), providing an ~~adhesive~~adherent surface ~~with~~having the characteristic of ~~non skidding in~~not slipping on the surface ~~where~~on which it is placed.

[0028] ~~[0025] Regarding~~With regard to Figure ~~3, showing a transversal cut~~3 that shows a cross section of the flexible laminate for ~~coating~~covering and ~~protection of~~protecting surfaces. ~~In said figure~~, it shows laminate (1 ~~composed~~) formed by ~~such~~the lower layer ~~that is comprised by~~composed of the non-woven polyester ~~3,~~(3) that is saturated with the foamed plastisol (4); ~~such~~the foamed plastisol generates an irregular lower ~~surfaces with covered spaces 5, distributed heterogeneously with said~~surface with heterogeneously distributed spaces (5) covered with the foamed material ~~4, and spaces 6 distributed heterogeneously,~~(4) and heterogeneously distributed

spaces (6) free of the foamed material 4. Such layer, comprised by said non-woven(4). The layer composed of the unwoven material 3(3) saturated with the foamed plastisol 4, being attachedmaterial (4) is joined by means of an adhesive film (7) to the upper flexible topand decorative film 2.(2).

[0029] [0026] RegardingWith reference to Figure 4, showing4 that shows a schematic diagram of the method and devices for stamping and laminate. In such figure, thelaminating, supply spool 8, supplies the(8) feeds a film of flexible PVC film 2,(2) running through an entry accumulator 9 that collects such film through accumulating rollers 10,input accumulator (9) that accumulates the film by means of accumulator rollers (10) and proceeds later to a film stabilizer of(11), the film 11,(2) then said film 2, passesgoes through a series of stamping rollers 12,(12) that stampimprint the film with different stamps, according to what isvarious designs, as desired; once imprinted, the flexible PVC film 2, once stamped,(2) is drivenwound on to a wrapping roller (13 of) for stamped film.

[0030] [0027] With regard to Figure 5, showing5 that illustrates by a schematic diagram of the method and devices to impregnatefor impregnating and melt plastisol, according to the invention herein. Such figure supplies the non-woven polyester 3 throughfusing plastisol, in accordance with this invention, that Figure shows that unwoven polyester (3) is provided from a roll 14, passing(14) running through leadsome guide rollers (15) that guide it to applyingsome rollers (16 of) applying foamed plastisol (4) from a deposit repository (17); once the foamed plastisol is(4) has been applied 4 in that non-wovento the unwoven polyester layer 3,(3), it goesis run through an oven 18, for the corresponding seasoning(18) in order to cure it. When the non-wovenunwoven polyester 3,(3) impregnated with foamed plastisol 4, goes(4) comes out of the oven 18,(18), it passesis run through the first cooling rollers 19,(19) and then after leadthrough guide rollers (20) and then on to later pass through second cooling rollers 21,(21) and from there

to an accumulator ~~22,~~(22) that ~~gathers~~accumulates it ~~through~~on accumulating rollers ~~23,~~(23) to later guide it to a ~~collecting~~collector spool ~~24 of non woven~~(24) for unwoven polyester with ~~the~~ foamed plastisol, ~~making a sole~~now constituting one film.

[0031] ~~[0028]~~ ~~Regarding~~With reference to Figure 6 that shows a schematic diagram of the method and devices ~~to attach and conform~~for bonding and conforming layers ~~for~~in order to form ~~such~~the flexible film for ~~coating~~covering and ~~protection of surfaces, according to the invention herein. In such figure, non woven polyester 3,~~protecting surfaces, in accordance with this invention, that Figure shows that the unwoven polyester (3), impregnated with foamed plastisol ~~4,~~(4), once ~~seasoned~~cured is supplied through a roll ~~25, passing~~(25), then run through an adhesive transfer roll ~~26,~~(26) placed ~~on the bottom,~~below which transfers adhesive (27) from the adhesive deposit (28~~; then~~). Then, from a supply spool ~~29,~~(29) the flexible PVC decorative laminate (2) is unrolled, joined and ~~overlapped and fitted against~~coupled to the face of the ~~non woven~~unwoven polyester layer ~~3,~~(3) saturated with foamed plastisol ~~4,~~(4) covered with adhesive ~~27, passing~~(27), then passed through pressure rollers ~~30,~~(30) and ~~afterwards~~later through a ~~laminating devise 31,~~laminator (31) that laminates and ~~also~~simultaneously provides additional pressure~~, conforming laminate 1 according to the invention herein; such laminate passes finally~~ to constitute laminate (1) in accordance with this invention. The laminate is finally run through an accumulator ~~32, through~~(32) via accumulating rollers ~~33, and finally is driven to a~~(33) and is finally wound on to finished product ~~roll 34.~~roller (34).

[0032] ~~[0029]~~ The invention has been sufficiently described ~~so that~~as to allow a person with average knowledge in ~~the matter may~~such matters to reproduce and obtain the results we have mentioned in ~~the~~this invention ~~herein Nonetheless~~. Nevertheless, any person skilled ~~person in the field of technique, subject of the invention herein, may carry out modifications~~in the technical area related to this invention would be capable of making changes not described in ~~the~~this

request ~~herein~~, so that to apply ~~these modifications to a determined~~such changes in a given structure~~,~~ or in ~~the~~its manufacturing process ~~of~~would require the ~~same, requires the claimed~~subject matter ~~in the~~laid claim to following ~~claims;~~, such structures ~~shall~~should be ~~covered~~included within the scope of the invention.

~~[0030] It should be noted and understood that there can be improvements and modifications made of the present invention described in detail above without departing from the spirit or scope of the invention as set forth in the accompanying claims.~~

ABSTRACT

~~The invention herein is an antiskid and adhesive~~A flexible, non-slip, adherent laminate for ~~coating different~~covering various surfaces and ~~the~~its manufacturing method ~~of the same, being such~~are disclosed. The laminate is characterized ~~as consisting of~~by two layers, ~~one lower comprised by a non woven~~a lower one composed of an unwoven polyester material ~~of polyester,~~ saturated with a foamed plastisol to generate ~~an adhesive~~a lower adherent surface~~,~~ and the other consisting ~~on a~~of an upper decorative flexible PVC ~~decorative top~~ film, both ~~attached~~joined together by ~~means of~~ a PVC adhesive~~, and such~~. The method ~~comprises the steps of:~~involves supplying ~~non woven polyester; application of foamed plastisol in the top face of such non woven polyester; seasoning of non woven~~the unwoven polyester; applying foamed plastisol to the upper face of the unwoven polyester; curing the unwoven polyester saturated with foamed plastisol in ~~the seasoning~~a curing oven; cooling ~~of non woven~~the unwoven polyester saturated with foamed plastisol, once ~~seasoned; application of~~cured; applying adhesive ~~in~~to the lower face of the polyester; supplying the decorative flexible PVC ~~decorative~~ laminate ~~against~~to the lower face of the polyester covered with adhesive; ~~pressuring~~applying pressure to the assembled laminate ~~as a whole;~~: accumulating the laminate; ~~and~~ collecting the laminate.